INDIANA DEPARTMENT OF TRANSPORTATION
OFFICE OF MATERIALS MANAGEMENT

SAMPLING STOCKPILED AGGREGATES
ITM No. 207-15T

1.0 SCOPE.

1.1 This test method covers sampling fine and coarse aggregate stockpiles.

1.2 This ITM may involve hazardous materials, operations, and equipment and may not address all of the safety problems associated with the use of the test method. The user of the ITM is responsible for establishing appropriate safety and health practices and determining the applicability of regulatory limitations prior to use.

2.0 SIGNIFICANCE AND USE. This ITM provides guidance on how to obtain aggregate samples from aggregate stockpiles for control of production at the source or control of the materials at the point of use.

3.0 TERMINOLOGY. Definitions for terms and abbreviations will be in accordance with the Department's Standard Specifications, Section 101.

4.0 APPARATUS.

4.1 Square bit shovel

4.2 Fire shovel

4.3 Sampling tube, 3 in. minimum in diameter and 3 ft minimum in length

5.0 SAMPLING.

5.1 Coarse Aggregate Sampling.

5.1.1 Using a front-end loader, dig into the stockpile and set aside a small pile of 10 to 15 t of material. This procedure shall be done in the same manner as if a truck is being loaded for shipment (Figures 1 and 2). When forming the small pile, the loader bucket shall be as low as possible and roll the material from the bucket rather than dumping the material. Reducing the distance the material is allowed to free-fall will reduce the amount of segregation that may occur in the small pile (Figure 3). Each additional bucket load of material shall be obtained and dumped in the same manner as set out above and shall be placed uniformly over the preceding one (Figure 4).

5.1.2 Thoroughly mix the small pile. Using the loader bucket, proceed to the end of the oblong pile and roll the material over. Keeping the loader bucket as low as possible, push the bucket into the material until the front of the bucket is past the midpoint of the original pile. The loader bucket shall then be slowly raised and rolled forward thus producing a smooth mixing of the material (Figures 5, 6, and 7). Proceed to the opposite end of the pile and repeat this mixing procedure. If the pile does not appear to be uniform, additional mixing shall be done.

5.1.3 The pile is now ready for sampling. Do <u>not</u> strike off the top of the stockpile (Figure 8). The sample shall be taken at the center of the volume which is approximately one-third of the height of the pile. The sample shall consist of not less than six full shovels of material taken at equal increments around the pile (Figures 9, 10, and 11). A square bit shovel shall be used. The size of the shovel shall be such that the sample meets the minimum weight (mass) requirements of the test conducted on the sample. The shovel shall be inserted full-depth horizontally into the material and raised vertically. Care shall be taken to retain as much of the material as possible on the blade of the shovel (Figure 12).

5.2 Fine Aggregate Sampling.

5.2.1 Fine aggregate samples are normally obtained as set out above for coarse aggregate, except a fire shovel or sampling tube shall be used.

5.2.2 When fine aggregate stockpiles are constructed so as to not exceed the height of the sampler, and when segregation is not apparent, the samples may be taken directly from the face of the large stockpile. The surface crust of the stockpile is required to be removed from the sampling area.

6.0 SAFETY.

6.1 Samples shall not be obtained by climbing onto stockpiles due to the hazard of burial and suffocation from unstable stockpiles of unconsolidated materials. Also, over-steepened stockpiles that may sluff and engulf personnel in the immediate area should be avoided.

6.2 Personnel requiring additional information concerning specific sampling situations are directed to contact the appropriate District Testing Engineer.

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

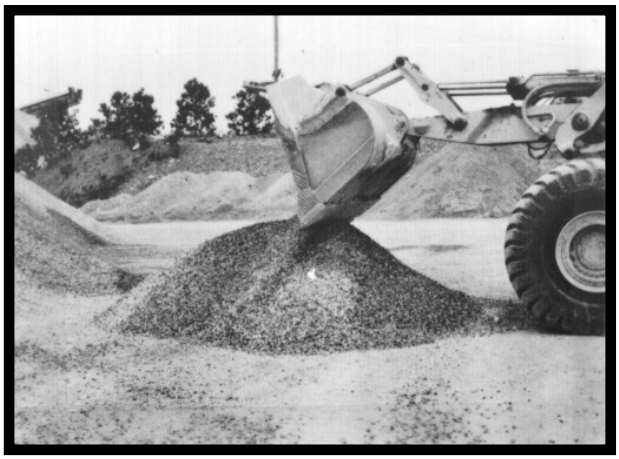

Figure 7

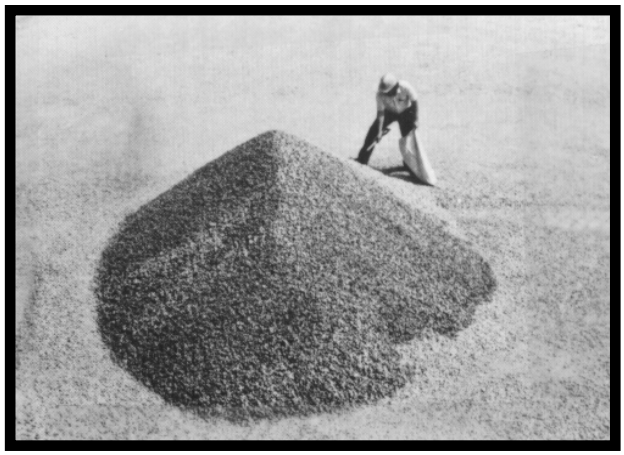

Figure 8

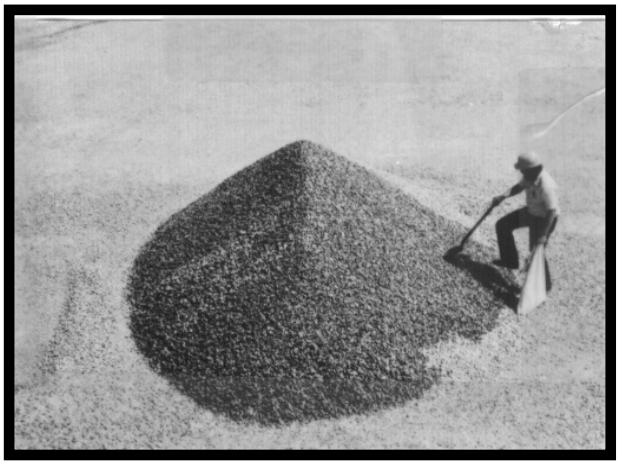

Figure 9

Figure 10

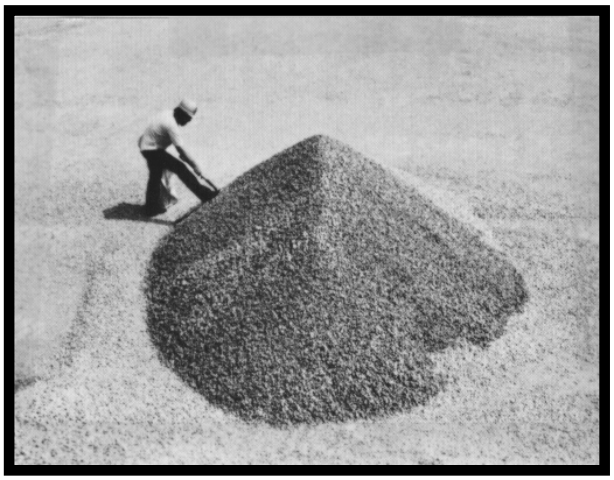

Figure 11

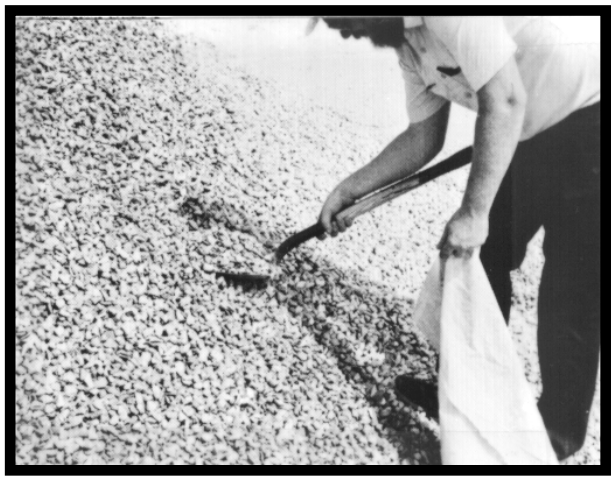

Figure 12